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ABSTRACT

Studies in Canada have shown that between 16 percent and 38 percent of Canadians are illiterate or have low literacy skills and, therefore, have difficulties in accessing and using medical care and medical information. They have also found a contributory connection between low literacy and poor health and over-use or inappropriate use of health care facilities, especially hospital emergency rooms, in low-literate communities in Canada. Many approaches can be suggested to ameliorate this problem. Although eliminating illiteracy and low literacy is the ideal, an interim solution is needed. Suggestions for health care professionals include the following: (1) awareness of the problem; (2) development of materials at the appropriate reading level; (3) assessment of patients' reading levels through simple tests in order to determine ability to comprehend medical instructions; (4) dissemination of medical literature written at low levels to all patients; (5) keep information dissemination simple and slow and put information in context of what patients already know; and (6) cooperate with literacy providers to develop health literacy programs. Appended are: techniques to improve patient information brochures for patients; 10 tips for better communication; and techniques that improve oral communication with patients. (Contains 19 references.) (KC)

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Health and Literacy: What is the Connection?

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As a health care professional it is important for me to link this knowledge base with my current practice in adult education. One way to do this is by looking at how education level, or more specifically literacy level, affects an individual's health status and their ability to access health care in Canada. Do individuals with lower literacy skills have more health problems than their counterparts with higher literacy skills? Are individuals with lower literacy skills able to access the same health care information as the rest of society? In this paper I plan to look at the link between literacy and health, to identify some of the factors that relate literacy with health and health services. I will also look at what health care professionals and literacy programs may do to cope with this issue and ultimately what I, as a health care professional and adult educator, can do in my own practice.

To begin, I would like to look at what literacy is, specifically in connection with health and health care. There are many definitions used for literacy and health literacy. Literacy in general includes the ability of the individual to read and write. Also included in literacy is the ability to calculate numbers and comprehend various forms of information, in order to function in society (Perrin, 1998). Health literacy looks beyond the daily literacy skills to literacy skills required in the world of health and health care. The American Cancer Society, as reported by Kerka (2000), defined health literacy as "the capacity to obtain, interpret, and understand basic health information and services and the competence to use such information and services in ways that enhance health." (p. 1). In addition health literacy includes the ability to work with numbers, in order to calculate medication requirements. Health literacy also includes the ability to problem solve and to communicate effectively with health care professionals.

Literacy Statistics

There has long been an interest, by government and educators, in the literacy levels of Canadian adults. A variety of studies have been conducted to attempt to determine the statistics of illiteracy and low literacy in Canada. There is some controversy over the accuracy of these statistics. The validity and accuracy of the studies have come under question. At this time there are no other studies that have been determined to be more accurate so for the purpose of this paper the statistics from these studies will be used. Although they may not be totally accurate they give us something to consider in terms of numbers and the seriousness of the issue.

It is felt by some authorities that over one third of Canadian adults have some difficulties with reading (Ontario Public Health Association, 1992). Statistics Canada (as reported by Ontario Public Health Association) reported that, in 1990, "22% (4 million) of the Canadian population read well enough to use print material in a variety of situations if the material is clearly written, clearly laid out and the tasks are within familiar contexts. 16% (2.9 million) cannot read well enough to deal with most of the written material they encounter in everyday life." (p. 1.) This means that thirty-eight percent or almost seven million people will likely have difficulties with the medical information with which they are presented. Or, as reported by Perrin (1998), twenty-two percent of Canadians read at the lowest level and cannot determine how much medication to give their child. A further twenty-six percent read at a Level 2 and can only deal with materials that are simple, well laid out, and in a familiar context. These statistics indicate that 1/3 – ½ of the Canadian population will experience difficulty interacting in the health care world.

Literacy and Health

Beyond the fact that a significant number of individuals will have difficulty interacting with the health care world there are indications that literacy levels significantly impact an individual's health. Over the years studies have looked at a variety of factors affecting health. The general consensus has been that there is a negative correlation between literacy and health. The lower the literacy level of an individual the increased likelihood of health problems. Literacy level has also been shown to impact on how individuals access health care.

The Ontario Health Project found that people with less education had more health problems than individuals with higher levels of education (Breen, 1993). The NCSALL Report #14, by Rudd, Colton and Shacht (2000), mentions many studies that have linked health and the use of health services with literacy levels. One such report was by Baker, Parker, Williams and Clark (1998), which looked at the use of emergency treatment in non-life threatening situations and hospitalization. They found that individuals with lower literacy levels were twice as likely to be hospitalized than individuals with higher literacy levels. Other studies included in the report looked at preventative health care, and when individuals sought medical care. Overall, the studies indicate that individuals with lower literacy levels waited longer to receive medical attention, did not participate as fully in medical screening procedures and were generally not as healthy as individuals with higher literacy levels (Rudd et al., 2000). This information has been validated by other studies as reported by Greenberg (2001).

Knowledge of one's illness, in conjunction with literacy, has also been examined. These studies have found a correlation between knowledge of an individual's illness and their literacy level. (Greenberg, 2001; Williams, Baker, Parker &Nurss, 1998). This should not be a surprise as the majority of the patient information is print based, with limited verbal backup. It would be safe to assume that low literacy skills would be a barrier to obtaining information regarding chronic illness. What was a bit of a surprise was that the level of the patient's knowledge of their disease did not to impact the control of their disease. Williams et al. found that an improved knowledge of the illness did not always translate into improved control of the individual's diabetes or high blood pressure. The authors acknowledged that the particular parameters used for determining the degree of control might have affected the results of this study. There may be other factors involved in this situation as well. This question will be addressed later in the paper.

A study conducted in Manitoba looked at literacy levels, economic situation and health. This study found that there is a "...connection between low literacy and poor health that, though not causal, is certainly contributory." (Sarginson, 1997, p.1) Other findings of this study included:

1. Instances of disease and epidemic increased markedly in areas in which the literacy rates where the lowest.
2. Violent deaths were more prevalent in low-literate areas than elsewhere in Manitoba.
3. Hospital usage by children was highest in low-literate communities.
4. These communities also had the highest rates of hospitalization for infectious disease and the highest rates of accidental and violent death. (Sarginson)

These findings are quite alarming and should provide great concern for the medical community and the government, not only in Manitoba but also in all of Canada.

Baker, Parker, Williams, Clark & Nurss (1997) found that there is a strong link between self-reported health and literacy levels. They acknowledged that part of this link might be due to differences in reporting health by different groups of individuals. However, the validity of the reported health is supported by other studies that have looked more objectively at health measurements. These studies support the thesis that individuals with lower literacy levels have higher rates of poor physical health and hospitalization, regardless of the illness or parameters looked examined. (Greenberg, 2001; Hohn, 1998)

That there is an impact on health by literacy level seems to be quite clear. The question then becomes *how* does literacy affect the health of individuals with low literacy skills and their families? The literature on health and literacy suggests many reasons why low literacy skills may have an impact on health and health status.

One of the most commonly mentioned problems in the literature is the inability of individuals with low literacy skills to read the instructions and information provided by health care providers. This includes information such as appointment slips, discharge information, patient instruction sheets, medical procedure instructions, consent forms and medication information. (Greenberg, 2001; Perrin, 1998; Rudd, 2000) Much of the patient information is written at an eighth grade level or higher (Hohn, 1998; Kerka, 2000; Mayeaux et al., 1996; Sissel and Hohn, 1996). This makes this information inaccessible to three million people according to Stats Canada's research (Ontario Public Health Association, 1992). In the United States research by Williams, Parker and Baker,

as reported by Preston (1995), found that forty-two percent of individuals in the hospital did not understand directions to take medication on an empty stomach. Twenty-six percent could not read when their next scheduled appointment was and sixty percent of those surveyed could not understand a standardized informed consent form. These numbers are very alarming, and indicate how serious and widespread health literacy issues are.

This inability to read what is considered to be basic medical information can have a huge impact on an individual's health. The inability to read prescription information leads, at best, to ineffective drug therapy and, at worst, overdose or hospitalization for an untreated condition. The inability to read an appointment slip, educational information or procedural directions, leads to missed appointments. This can lead to increased health problems and increased costs to the individual and the health care system. Patients who are unable to read information are often classified as noncompliant and unwilling to follow directions. When a patient is classified as noncompliant the health care team often spends less time with the patient.

The majority of health information that is used in the community and by health care professionals is print-based. This means that people with literacy issues have difficulty assessing even the most basic of health information including nutrition information or instructions for mixing baby formula (Ontario Public Health Association, 1992; Perrin, 1998). This is a major health risk for individuals with low literacy skill and their families. Incorrectly mixing infant formula can lead to serious health issues including dehydration, kidney failure, malnutrition, and stunted brain development. Basic

information on nutrition and common symptoms and treatments for common childhood diseases are inaccessible to individuals who have difficulty reading (Sarginson, 1997). Health promotion strategies are inaccessible as well.

People with limited literacy skills are also at greater risk for accidents in the home and in the work place. The inability to read warning and safety information on chemicals and equipment can lead to misuse and harm. (Ontario Public Health Association, 1992; Perrin, 1998) Studies have shown an increase in accidents in rural communities where lower literacy skills are prevalent, especially in association with the use of recreational vehicles and equipment due to difficulty reading the operators manuals (Perrin, 1998; Sarginson, 1997).

Access to health services and effective use of the system is also directly affected by literacy level. (Perrin, 1998). It has also been shown that individuals with limited literacy skills do not always access medical services appropriately. There may be under or over use of services, often with inappropriate use of emergency services (Perrin; Sarginson, 1997). This may result in failure to seek medical services until a crisis has occurred. This, in turn, leads to increased health costs and additional health problems in the long run. Using the health care system effectively involves the ability to comprehend the information provided by the health care team. As Perrin points out, individuals with limited literacy skills often have limited previous knowledge about health and health information. This makes it more difficult for these individuals to understand verbal instructions and information, as they do not have a context in which to place the new information. With out this understanding, problem solving and acting on the new information is very difficult.

The issues already mentioned have a direct impact on an individual's health. There are other issues, related to literacy, that also play a more indirect role in an individual's health. Sarginson (1997) feels that the biggest impact on health, for low literacy individuals, is due to the lifestyle choices they make. There is a greater incidence of smoking amongst individuals with lower education than their more highly educated counterparts. Individuals with low literacy skills are not always as well informed about general health issues such as nutrition, smoking, the benefits of breastfeeding, regular doctor visits, use of seat belts or smoke detectors and other preventative actions that many of us feel is common knowledge (Perrin, 1998). Limited literacy skills can lead to increased stress. These individuals often experience less control of their work and home situation and have a more difficult time adapting to changes in their lives (Perrin). Individuals with low literacy skills are more likely to endure unhealthy working and living conditions (Perrin; Sarginson). All of these situations lead to increased health problems in the long term.

Limited literacy skills are also a factor in poverty and employment opportunities. Poverty has been shown to have a direct impact on health. As cited in Roberts (1998), there is a relationship between socio-economic status and disease for almost every disease throughout the world. Individuals with lower literacy skills are often working in situations that are more dangerous. They often cannot read the warning signs and instructions regarding proper use of equipment and chemicals; this leads to an increase of work-related injuries and illnesses (Ontario Public Health Association, 1992). People with lower literacy skills are also less likely to be able to advocate for themselves and to make significant changes in the workplace (Perrin, 1998).

There seems to be no disagreement that there is a negative correlation between literacy/education levels and health. The question then becomes how can this relationship be changed or how can the statistics for the number of individuals affected be changed.

What can be done?

There are many approaches to this problem. Ultimately eliminating illiteracy and low literacy would solve the problem. This is probably not a realistic solution at this time, and an interim solution would still be needed. Illiteracy and low literacy need to become less of a barrier to health and health services. How does one accomplish this? Just as there are many factors involved in creating the barriers, there will need to be a variety of approaches to breaking down the barriers as well.

For the remainder of this paper I would like to concentrate on what can be done from the health care professional's perspective, and what the literacy programs can do to help address this problem. I will review the recommendations in the literature and examine what this will mean for my own practice as a health care professional and an adult educator.

Health care professionals

Within the literature on health and literacy there are a variety of suggestions and recommendations for health care professionals working with individuals with low literacy. Many of the articles concentrate on physicians and nurses, but the recommendations apply to all health care professionals. One of the first issues that need

to be addressed is increased awareness, within the health care field, of the literacy issues. Many health care professionals would say that they do not have any patients who have literacy problems. However, based on the stats that 1/3 – ½ of Canadians have difficulties with information that is not presented simply, clearly and within a familiar context, it would be fair to say that all health care professionals have had patients who had difficulties reading the print-based information they were provided. When health care professionals are faced with patients who do not follow recommendations the initial reaction is to call the patient noncompliant. The issue of literacy is often not considered. I wonder how many of my "noncompliant" patients were in reality individuals with low literacy skills, who were unable to understand the materials and instructions provided.

Increased awareness needs to occur through the health professional associations and the health care institutions. This can occur through education as well as the development of policies and guidelines for developing educational materials. The American Medical Association has developed a call to action regarding low literacy and health. This call to action includes; recognizing that poor literacy does affect diagnosis and treatment, awareness that twenty-five percent of adults have difficulty understanding oral and written information, encouragement for educating doctors and students on communication skills and a call for funding to further research in the area (Greenberg, 2001). In my own profession, there has been an increased focus on educational materials and developing materials that are at an appropriate reading level. As we will see later this may not, however; be enough to make a difference for patients with low literacy skills.

The next issue, after professional awareness, is how to identify patients with low literacy skills. Asking patients if they have problems is not generally effective, as many individuals will not identify themselves as having literacy difficulties. There are many reasons for this. Shame and embarrassment are felt to be two of the main reasons individuals hide their literacy problems (Greenberg, 2001). Often not even family members are aware that the individual has difficulties. Studies have shown that individuals tend to over estimate their reading abilities. They feel that they read well enough to cope in the world. However, when tested these individuals often read below the level that most educational materials are written at (Murphy & Davis, 1997; Greenberg). Thus, simply asking the individual how well they read is unlikely to give the information that is required. So how does the health care professional know who to be concerned about and with whom to use lower reading level education materials?

There are a variety of ways a health care professional may deal with this question. The first way would be to screen patients they have concerns about with a literacy test (Davis, Meldrum, Tippy, Weiss & Williams, 1996; Kelly, 2000; Mayeaux et al. 1996; Murphy & Davis, 1997). In the literature there are two main tests that are recommended for use when screening for health literacy levels. The first is the Rapid Estimate of Adult Literacy in Medicine (REALM). This screen was developed for use in public health and primary care settings to help identify individuals with low reading levels. It provides reading grade estimates for individuals reading below a grade nine level. This test only takes 2 – 3 minutes to administer (Davis et al.). Davis et al. showed that it correlates well to other standardized reading tests, and it is practical to use in health care settings. The test consists of three word lists, with twenty-two words in each list. The words are all

health care-type words such as germs, nausea and infection. The patient is asked to read the words, starting with the easiest list. The tester keeps track of how many words the individual is able to read. The number words read correctly is used to ascertain an approximate reading level (Davis et al; Murphey & Davies).

Another test that is mentioned in the literature is the Short Test of Functional Health Literacy in Adults (STOFHLA). This test uses a modified cloze technique to assess comprehension of health words within context (Greenberg, 2001). It also looks at the ability to read and comprehend numbers (Davis et al, 1996). The test takes ten to twenty two minutes to administer and was designed specifically for measuring health literacy in research settings (Davis; Greenberg).

Either one of these tests could be administered by the health care professional when seeing the patient. This information could then be used to develop patient specific materials and approaches. However, as discussed by both Greenberg (2001) and Davis (1996), there are concerns that the STOFHLA and, according to Greenberg, the REALM are appropriate for research purposes but not for diagnosing reading difficulties.

Other concerns raised by Greenberg (2001) include the fact that the REALM does not test for comprehension of the words. It is only testing for the person's ability to read them. In addition, she raises the question as to how well an individual who is ill, and in an unfamiliar situation, will do on this test. Will it be representative of their true abilities? How will the individual being tested feel? One literacy program participant expressed that had he been faced with such a test, he would likely not return to that particular clinic (Greenberg).

My question is: although the REALM is quick and easy to administer, do doctors or other health care professionals have the time to conduct the test as part of an initial interview? Time is already at a premium for doctors, nurses and other health care professionals. How comfortable would a health care professional feel administering such a test? For myself, I would feel very uncomfortable administering this test without having previously established a relationship with the patient. I feel it would be awkward and difficult to do without placing the patient on the defensive.

There are individuals who feel that patients should not be screened for literacy levels. This belief is based not only on the previously mentioned concerns regarding the validity of the tests, but also on how this information will be used. Will the health care professionals have the tools available to make the necessary adjustments? Do they have the resources for support and referrals to literacy agencies? If there is no resulting action from the tests should individuals be put through the test?

If we take a look at the statistics and recognize that 1/3 or more of all patients may be affected by low literacy skills, it begins to make sense to have all educational materials and all educational approaches suitable for individuals with low literacy levels (see Appendix A for suggested techniques). One concern, which may be expressed with this approach, is that materials that are written too simply would offend patients with higher literacy skills. Studies, however, do not support this concern. They have shown that individuals with higher literacy skills prefer health education materials that are written at a simple easy to read level (Greenberg, 2001; Mayeaux et al., 1996). Studies have also shown that reducing the literacy levels of written material is more helpful to individuals

with higher literacy levels than the individuals with lower literacy levels to whom the materials were targeted (Greenberg; Kerka, 2000). Writing all materials in a simple and easy to read way would be appropriate, regardless of the patients reading abilities.

This research as well as other research, however, suggests that simplifying educational materials does not solve the issue of access to health information. Verbal communication is an important part of the education process. Studies have shown that for the best comprehension, verbal instruction and print-based materials should be used together to support each other (Greenberg, 2001; Mayeaux et al., 1996).

Low literacy not only affects an individual's ability to read and write. It also impacts the individual's verbal communication skills. Individuals with low literacy skills generally have a lower verbal vocabulary as well. Thus, verbal communication must also be kept simple and clear (Murphy et al., 1997).

Individuals with low literacy are also likely to have less background knowledge on a particular health subject. Without background knowledge it is more difficult to understand and put new information into a context that is useable and can be remembered. Information needs to be presented within a familiar context for best understanding.

As a result, health care professionals must look at their whole communication process. Unfortunately, in most education programs, there is little time spent training the trainer on the communication process and on adult education techniques. In the literature there are some excellent suggestions regarding points to remember when educating individuals with low literacy skills. These suggestions should be used in all education

settings, not just in those pertaining to individuals with low literacy skills. The key points are as follows:

- Keep the information simple and slow. Do not try to rush through all the information. Pick two or three main points and emphasize them. Present the most important point either first or last.
- Use print-based materials to further support what has been stated verbally. Underline or highlight the main points.
- Have the patient repeat, in his/her own words, what s/he has understood.
- Use pictures, diagrams or graphs, when appropriate, to reinforce the information provided.
- Use demonstrations whenever possible. Have the patient demonstrate back the procedure.
- Pay close attention to what the patient is saying both verbally and through body language. Listening is the most important part of communication, but the most often missed.
- Put the information into a context that is familiar to the patient through use of stories. The more relevant it is the more likely the patient will remember and follow through on the recommendations.

(Davis et al., 1996; Kelly, 2000; Mayeaux et al, 1996; Murphy et al., 1997)

(For more tips see Appendix B)

These suggestions are important for all education sessions, regardless of literacy levels. If a patient, who has a higher literacy level, wants more information they will ask for it. It is generally easier to increase the complexity of information provided, when

appropriate, rather than to simplify it. Most patients, regardless of literacy level, appreciate simple and easy to follow information. In my twelve years in the health care field I can think of very few individuals who have complained that the information was too basic or simple.

If during the session there are still questions regarding comprehension, further exploration may be undertaken. There are some informal screenings that can be done to assess for comprehension and literacy level. Watch for red flags that indicate an individual may have difficulties reading. Some common indicators include: the individual claims to have left his/her reading glasses at home; the individual does not bring forms back that were sent home with them to be completed; the individual only fills in the top part of the form, name, address etc.; the individual has difficulty following directions or instructions. A quick test, which may confirm reading or visual difficulty, involves handing the individual the written information upside down to see if they turn it right side up. Or show the individual a medicine bottle to see if they can determine how to take the medicine (Davis, 1996; Kelly, 2000). These are just a few suggestions for starting the investigative process. If the health care professional feels that there is a more serious literacy issue, then they need to refer the individual to a literacy program and work with the patient and family or caregivers to ensure an adequate understanding of the medical situation and the prescribed treatment.

Literacy Programs

The health care professional does not need to work on the health and literacy problem alone. Health care professionals need to recognize the role of the literacy programs and be aware of the programs and referral systems available in their community. Literacy programs have a role to play, along with the health care professionals, in helping to improve the health of individuals with low literacy skills. Literacy programs have been used in the past, and continue to be used, to introduce a variety of topics and issues as a vehicle for learning literacy skills. Health is just one of the many topics that have been used in the past. Hohn (1998) notes that there is an increasing focus, among literacy programs, to be more learner-centered and to use topics and content that is relevant to the participants in their everyday lives. As Hohn points out, this approach is part of the history of adult education with its roots founded in the philosophies of Malcolm Knowles and Paulo Freire. Knowles emphasized that the adult learners are an important part of the learning process, bringing with them their own knowledge and experiences. Freire felt that transformative education is the center of adult education. His goal was for education for change, specifically societal change. This philosophy has developed into the participatory education model in North America today.

Many adult literacy programs try to use this as their model for the educational process. Health education is a good fit with this model of education. A participatory approach allows participants to have their particular health issues addressed while learning literacy skills. It allows for learning about the resources in that community, and

how to access them. Because of the specialty of the information, teachers may need to access outside resources. This is where a link with the health care system could be beneficial, as a resource, to the teacher and class members for health information.

There are a variety of examples in the literature combining health education and literacy education in a participatory format. Sissell and Hohn (1996) and Hohn (1998) describe a number of projects from the United States, including Operation Bootstrap that used the participatory approach to deal with issues of literacy and health. Often these types of programs are community based, working from a grass roots level and with the collaboration of participants and facilitators. Although participatory education does not use set lesson plans there are resources available with examples of possible lesson plans for health education in a literacy or adult basic education setting. One such book is "Learning for our Health. A resource for participatory literacy and health education" by M. Norton and P. Campbell (1998).

Some teachers may use the liberal theory model of education. I feel that this model also works well for literacy classes and the discussion of health issues. The liberal philosophy differs from the progressive theory largely in the role of teacher and the expected outcome. In the participatory model the goal is for changes to occur within society or the community of the learners. The liberal model is looking mainly at the individuals in the class. In the participatory model the teacher acts as a facilitator while in the liberal model the teacher is looked to as the source of information.

In some parts of Canada there are concerns that the progressive and liberal styles of literacy classes, that emphasis learning beyond literacy, are in jeopardy. The government is becoming more involved in literacy programs and demanding certain measurable outcomes from the classes. This will greatly affect the ability of the teacher to meet the needs of the students. If the government is concerned about the health issues for individuals with low literacy skills, it needs to look beyond the scope of teaching individuals to read. It needs to look towards literacy programs as a place for individuals to build their knowledge regarding health issue and a place to incorporate this information into their lives.

Teaching literacy skills and adapting educational materials to an appropriate grade level may not be sufficient to change the health outcome of individuals with low literacy skills. Knowledge alone does not necessarily lead to change. The study by Williams et al. (1998) alluded to the fact that increased knowledge did not result in improved health for individuals with diabetes and high blood pressure. Literacy and education alone do not lead to healthier lifestyles. Many highly educated individuals are involved in health-hurting activities, such as smoking. A higher education level does not guarantee understanding and following medical advice. I have had many clients, who despite their education did not follow the medical advice given.

Individuals with low literacy skills often have an even greater challenge in changing behaviors than their more highly educated counterparts. Individuals with low literacy skills often feel powerless to make changes even after receiving the necessary information. Without strategies to make changes, or the tools to problem solve, implementing change is very difficult (Perrin, 1998). Individuals need to feel that they

have control of their own lives. Adult literacy classes can be an important part of this process, in that control is given back to the student. Students develop coping skills and receive support for the changes they are making in their lives and in their communities.

Unfortunately, the majority of people with low literacy skills are not in the classroom. The stigma and shame is so great that many people will not admit to having a problem or needing help. More work is needed in the area of public education to remove the shame that low literacy brings. This also means that literacy programs and health care professionals cannot deal with this issue alone. There needs to be involvement from other agencies, including government and industry. Industry may be able to help by providing classes at the job site, and providing individuals with a safe place in which to admit that they have literacy difficulties. Industry can have a significant impact on the health of employees in the work area by ensuring safe practices and adequate understanding of warning labels and cautionary signs.

Government also has a place in this discussion. Government can affect policies to help encourage individual's to stay in school. Government needs to look at all of the effects of literacy programs. These include not just the increase in literacy skills, but also the increase in life skills, health skills and coping skills that can result from safe, participatory literacy programs. The government and government agencies including public health need to look at alternative methods for information delivery. Print-based materials are not the solution. Are there other methods that would be more effective? It is time to become creative in the problem solving area.

Conclusion

That there is a connection between literacy level and health is clear. What is less clear is how to deal with the issue and help individuals with low literacy access the resources they need and to provide the information they require in a form that is clear and understandable for them. There are many issues and solutions that can be examined. There are many approaches that can be taken. Health care professionals have a role to play, as do the literacy and adult basic education classes. Workplaces can also have an impact by providing literacy classes and ensuring safe work environments. Government has a role to play with educational policies and by looking at issues of poverty and unsafe living environments. Ultimately, just as there is no one cause there is no one solution to literacy and health issues. The solution needs to come from a variety of agencies and a variety of sources. The greatest impact will occur when all of these agencies come together. Collaboration would bring about a synergy that cannot occur when each agency is working in isolation.

I may not be able to solve the problem but I am now better equipped to address the situation as an adult educator and a health care professional. As I continue to work in these areas I will need to develop education materials that will be appropriate for all individuals regardless of their literacy level. I will endeavor to make use of non-traditional tools such as videos, pictures, graphs, story telling and what ever is required to help my clients better understand the health issue being discussed and to take help them take control of their own life and health. Helping them to find solutions from within themselves that will work for them. Ultimately that is what success is made of!

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Appendix A

Techniques to Improve Patient Information Brochures for Patients

- Define the purpose of the material. Decide when and how the brochure will be used and provide behavioral objectives by giving "how-to" information. For example, instead of writing "The medication should be taken twice a day with food" write "Take one pill with breakfast and one pill with supper every day."
- Use short, eight- to 10-word sentences. When possible, use simple words with one or two syllables, write in the active voice and use a conversational style. For example, instead of writing "Use of nasal saline lavage, followed by nose blowing, greatly decreased nasal congestion," write this: "Spray the salt water into your nose and then blow your nose. Now you can breathe better."
- Select a type style that is easy to read. Write subheadings in uppercase and lowercase letters, and use bold type to emphasize key information in the text. Avoid using italics and abbreviations.
- Use a great deal of white space between segments of information. Use shorter paragraphs. This appearance is less threatening to readers with low literacy levels.
- Provide a question-and-answer page for patient interaction. If teaching with a booklet, underline key points with a pen or highlighter.
- Include simple, meaningful, culturally sensitive graphics. It's important that artwork include a variety of races and cultures, particularly the ethnic or cultural groups most common in your practices. The text should also reflect the target audience's cultural beliefs and values.
- Use cues such as arrows, underlines and bullets to help the reader's eye focus on the most relevant information. Choose paper colors that appeal to the target audience.
- The cover of the brochure should be colorful and appealing, and a heading should briefly indicate the message in the text.
- If possible, use language in the test that your patients would use. This familiar language allows them to focus more on the message and less on decoding the words.

Mayeaux et al (1996) p. 210

Appendix B

10 tips for better communication

1. Slow down!
2. Use simple language.
3. Ask for verification of essential points.
4. Repeat your instructions. Reconfirm your mutual understanding of essential points at every visit.
5. Ask patients, "Can you tell me in your own words what we've just discussed?" A simple "Do you understand?" often elicits a Yes when patients really haven't a clue.
6. Use the "show me" approach when appropriate.
7. Give some but not all of your instructions to patients at one visit; short sessions with limited information are more effective.
8. Remember that a picture is worth a thousand words.
9. Including a family member or friend may help.
10. Stories can be more memorable than a list of instructions. Work with patients to develop nontraditional approaches.

Davies et al (1996) p. 114.

Techniques That Improve Oral Communication With Patients

- Limit teaching objectives.
- Give many examples that have meaning to the patients. Consider including examples in a narrative story, possibly from the patient's own experience.
- Demonstrate procedures such as measuring dosages and counting pills.
- Make learning participatory. Ask patients to restate instructions in their own words. This technique enhances long-term memory of the information and checks the patient's comprehension.
- Repeat the information several times. Repetition is especially effective with patients who have low literacy levels. Find various ways to present the material.
- Organize your instruction so the most important messages are presented both first and last. Prioritize the information – patients may not remember many of the details used to explain the desired behavior.
- If culturally appropriate, make eye contact when addressing the patient. Sit next to the patient or at a comfortable eye level.
- Include family members or other caregivers in the education process. (Adult patients must clearly give permission before health information is shared in this fashion.)
- Incorporate materials that reflect cultural values and beliefs, and consider potential language barriers. Misunderstanding is increased when English is a second language.
- Be positive and encouraging. A negative attitude on the part of the physician may engender a negative attitude on the part of the patient.

Mayeaux et. al. (1996) p.207.

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